



## E-Band X3, Passive Frequency Multiplier

### Description:

**Model SFP-123KF-S1** is an E-Band, X3 passive multiplier that utilizes GaAs Schottky, beam-lead diodes and a balanced circuit configuration to generate third order harmonics with good harmonic and fundamental suppression. This multiplier requires an input frequency range of 20 to 30 GHz at +20 dBm RF power to yield 60 to 90 GHz at +3 dBm. The multiplier is equipped with a female K connector as its input port and a WR-12 waveguide with a UG-387/U flange as its output port. Other interface configurations are offered under different model numbers.



### Features:

- Minimal Conversion Loss
- No External Bias
- Compact Package

### Applications:

- Source Modules
- Communication Systems
- Radar Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Input Frequency	20 GHz		30 GHz
Output Frequency	60 GHz		90 GHz
Input Power		+20 dBm	+22 dBm
Output Power	-3 dBm	+3 dBm	
Harmonic Suppression		20 dB	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+85°C

### Mechanical Specifications:

Item	Specification
Input Port	K(F)
Output Port	WR-12 Waveguide with UG-387/U Flange
Case Material	Aluminum
Finish	Gold Plated
Weight	0.8 Oz
Size	0.75" (L) X 1.60" (W) X 0.50" (H)
Outline	FP-EK3

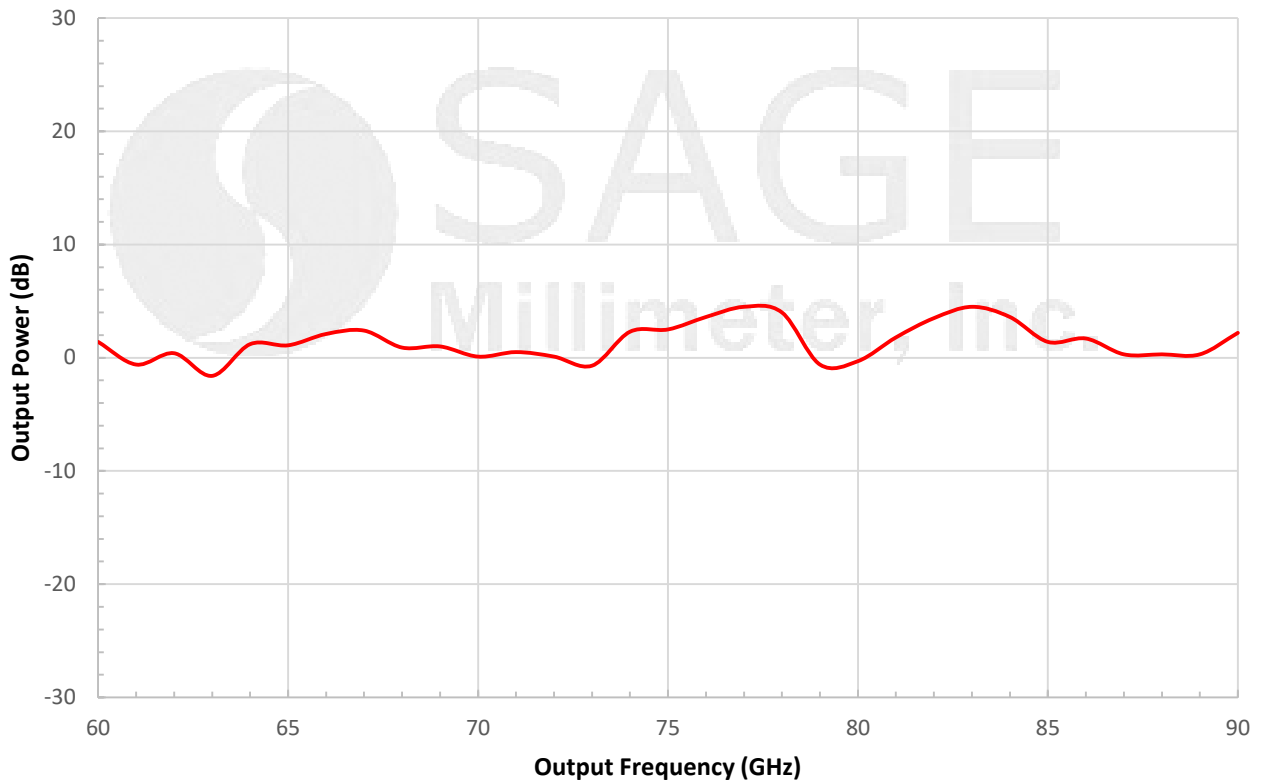




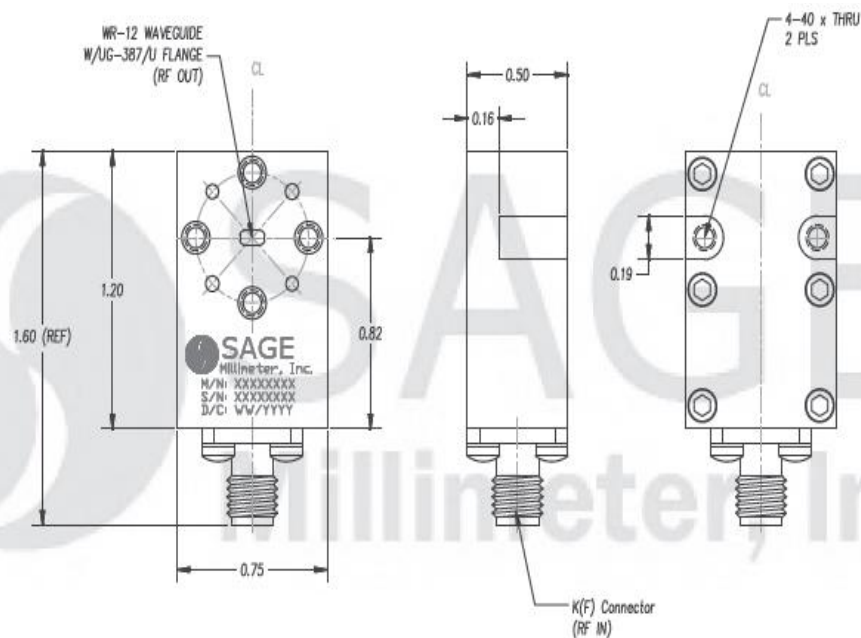
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### Typical Output Power vs. Output Frequency

$P_{in} = +20$  dBm,  $f_{in} = 20$  to 30 GHz



### Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)





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### Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25°C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### Caution:

- Exceeding absolute maximum ratings of the multiplier will damage the device.
- Any foreign objects in the waveguide will degrade performance and/or damage the device.
- The multiplier is a static sensitive device. Always follow ESD rules when working with the multiplier.

